ABSTRACT

A temperature control and compensation system is implemented by employing a closely coupled electrical architecture that applies the measured microdisplay temperature, one for each color channel, together with lookup tables preloaded with measured or predicted data for a display, to modify the liquid crystal voltage operating range of each microdisplay as required to achieve and maintain the proper white point operating point for the display. The electrical architecture includes functional blocks as required for realizing the temperature compensation and control for each color channel. The system microprocessor and control unit employs a lookup table to set the control registers on each microdisplay controller with values according to a computed value using the data retrieved from the lookup tables. The range of values in the lookup table includes setups for a number of varied conditions. One of these conditions is temperature.